

**CURRICULUM VITAE**  
**Christian T. Meyer**

**CONTACT INFORMATION**

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**EDUCATION AND TRAINING**

2010–2014	Colorado State University. Major: Physics, Minor: Math.	B.S. <i>cum laude</i> from the College of Natural Science GPA 3.86
2014–2020	Vanderbilt University. Mentor: Dr. Vito Quaranta	Ph.D., Department of Chemical and Physical Biology Thesis: <i>A Consensus Framework for Calculating Drug Synergy</i> .
2020-present	University of Colorado Boulder. Mentor: Dr. Joel Kralj,	Postdoctoral Fellow Department of Molecular, Cellular, and Developmental Biology

**PUBLICATIONS**

2021 **Meyer CT & Kralj JM.** Self-organized Criticality Governs Dynamic Equilibrium in Bacterial Calcium. *Cell*. (Under Review). Available from: <http://dx.doi.org/10.2139/ssrn.3925259>

**Meyer CT\***, Bruni GM\*, Dodd B\*, Kralj JM. Aminoglycosides induce a bacterial senescent state that increases antibiotic tolerance in treatment-naive cells. (*In preparation*).

Available from *bioRxiv*: <https://doi.org/10.1101/2021.10.04.463054>

\*Authors Contributed Equally.

Wooten DJ\*, **Meyer CT\***, Quaranta V & Lopez CF. A Consensus Framework Unifies Multi-Drug Synergy Metrics. *Nature Communications*. July 2021. DOI: 10.1038/s41467-021-24789-z

\*Authors Contributed Equally.

Scoggins BN, **Meyer CT**. Comparing a Survivin Inhibitor to Carboplatin for Treating Small Cell Lung Cancer in vitro. *Young Scientist*. May 2021.

**Meyer CT**, Jewell MP, Miller EJ, Kralj JM. Machine learning establishes single-cell calcium dynamics as an early indicator of antibiotic response. *Microorganisms*. March 2021.

DOI: 10.3390/microorganisms9051000

**Meyer CT**, Kralj JM. Bayesian, Universal COVID Testing. *medRxiv*.

DOI: 10.1101/2021.04.23.21255984.

Koschade SE, Klann K, Shaid S, Stratmann JA, Tholken M, Nguyen TD, Meyer L, Moser, LM, Hock S, Baker F, **Meyer CT**, Wempe F, Serve H, Munch C, Brandts CH. Functional translome proteomics identifies autophagy as a central and targetable resistance mechanism to FLT3 inhibitors in acute myeloid leukemia. *Molecular Cancer* (Submitted).

2020 **Meyer CT**, Wooten DJ, Lopez CF, & Quaranta V. Charting the Fragmented Field of Drug Synergy. *Trends in Pharmacological Sciences*. April 2020. DOI:10.1016/j.tips.2020.01.011 *Invited Review*.

2019 **Meyer CT\***, Wooten DJ\*, Paudel BB\*, Bauer J, Hardeman KN, Westover D, Lovly CM, Harris LA, Tyson DR & Quaranta V. Quantifying Drug Combination Synergy Along Potency and Efficacy Axes. *Cell Systems*, 8:1-12, February 2019. DOI: 10.1016/j.cels.2019.01.003 \*Authors Contributed Equally.

Shi C, Pan F, Kim J, Washington M, Padmanabhan C, **Meyer CT**, Kopp J, Sander M, Gannon M, Beauchamp R, Wright C, Means A. Differential Cell Susceptibilities to Kras in the Setting of Obstructive Chronic Pancreatitis. *Cellular and Molecular Gastroenterology and Hepatology*. Aug 2019; DOI: 10.1016/j.jcmgh.2019.07.001.

2017 Hardeman KN, Peng C, Paudel BB, **Meyer CT**, Luong T, Tyson DR, Young JD, Quaranta V & Fessel JP. Dependence on Glycolysis Sensitizes BRAF-mutated Melanomas For Increased Response To Targeted BRAF Inhibition. *Scientific Reports*, 7:42604, Feb 2017. DOI: 10.1038/srep42604.

### **FELLOWSHIPS**

2021-present T32 Integrative Physiology of Aging Postdoctoral Fellowship. Project #: 5T32AG000279-14  
2016–2020 National Science Foundation Graduate Research Fellow (NSF GRFP). Award #: 1445197  
2015–2017 T32 Integrated Training in Engineering and Diabetes Fellowship. Project #: 1T32DK101003–01A  
2014–2015 Research Assistant Fellowship, Vanderbilt University. Quantitative Chemical and Biological Program  
2014 NCAA Postgraduate Fellow National Award. Fellowship for NCAA student-athletes

### **INDUSTRY POSITIONS**

2019–2020 Co-founder of Parthenon Therapeutics Inc. <https://parthenontx.com/>. Current SAB member.  
2021-present Co-founder Duet BioSystems.

### **PATENTS**

2021 US Patent Application 17180280, “Methods for Evaluating Therapeutic Benefit,” Feb 19, 2021.

### **TEACHING EXPERIENCE**

2019--spring Instructor, Drug Discovery Online Course: *Organs-on-Chips in Drug Discovery*  
2017–spring Teaching Assistant, *Cancer Systems Biology (CANB8347)*, Graduate Class  
Developed and taught three lectures:  
–Information theory and its applications to biological systems  
–Fractals in Health and Disease  
–Scaling Laws in Biology  
  
2017–spring Guest Lecture, Undergraduate Seminar Health and Disease: Complex or Complicated (BSCI 1001.01)  
Lecture title: *Introduction to Fractals in Health and Disease*

### **ACTIVITIES TO PROMOTE DIVERSITY**

2019–summer Bailey Scoggins, ASPIRNAUT™ Summer Research Intern (6 weeks).  
Project Title: Modeling reaction kinetics of luminescence-based drug sensitivity assay.  
ASPIRNAUT facilitates intensive hands-on laboratory experience to under-served, high school students from minority backgrounds interested in STEM disciplines. See: <http://www.aspirnaut.org/> for details.  
This project lead to a first author publication for Bailey in a peer reviewed journal (*Young Scientist*).  
2018–summer Dario Rangel, ASPIRNAUT™ Summer Research Intern (6 weeks).  
Project Title: Heterogeneity and Drug in Small Cell Lung Cancer.  
2017 Organized a departmental talk titled “Women in STEM” given by Abigail Searfoss who discussed the history, progress, and future directions for promoting gender equality in STEM disciplines.  
2016–summer Dario Rangel, ASPIRNAUT™ Summer Research Intern (6 weeks).  
Project Title: The Effect of Insulin on Proliferation of Melanoma Cells  
2014–2020 Pen Pals with a Purpose: Outreach intended to foster a sense of education's importance for middle school students from disadvantaged backgrounds in Nashville via a letter exchange .

### **MENTORSHIP**

2021 Eugene Miller, Biological Sciences Initiative (BSI) undergraduate scholar from Computer Science department. Mentorship on project leading to his inclusion on a publication leveraging machine learning for antibiotic susceptibility testing. (Meyer et al. *Microorganisms*. 2021).  
2021 Zach Berriman-Rozen, Undergraduate in the the Neuroscience department working on self-organized criticality in neural cultures.  
2019-summer Vivian Truong, Summer Rotation Student (Lipscomb PharmD program).  
Project title: Engineering sensitivity to BRAFi in BRAF-mutant  
2016–fall Nichole Rogers, Vanderbilt Quantitative Chemical and Biological Engineering  
Rotation student (8 weeks) on project titled: Attractor Counts in Random Networks  
2016 –spring Andrea Perreault, Vanderbilt Quantitative Chemical and Biological Engineering

Rotation student (8 weeks) on project titled: Network Inference in Triple Negative Breast Cancer

### **SELECTED HONORS AND AWARDS**

- 2021 Highly Meritorious, NSF Postdoctoral Fellowship in Biology application  
2019 Vanderbilt Institute for Chemical Biology (VICB) Richard Armstrong Prize. Highest prize given in the VICB institute for excellence in graduate research.  
2019 National Center for Advancing Translational Sciences (NCATS) Scholarship. Abstract selected for travel scholarship to Keystone Symposium on Phenotypic Drug Discovery.  
2019 Vanderbilt Biochemistry Department Retreat. Best Graduate Student Talk.  
2018 Chemical and Physical Biology Program Student Leadership Award.

### **Selected Honors Prior to Vanderbilt:**

- 2014 NCAA Academic All-American: Track and Field  
2014 Mountain West Conference Student Athlete of the Year  
2014 Merrill-Gheen Award: Top Student-Athlete Colorado State University  
2013-2014 Marion and Dale Scholarship: Award for academic excellence in the College of Natural Sciences  
2013 NCAA Academic All-American: Cross Country  
2010-2014 Deans List, College of Natural Sciences  
2010-2014 Academic All-Conference Mountain West Conference: Cross Country, Indoor Track, and Outdoor Track  
2009 INTEL International Science and Engineering Fair Finalist

### **INVITED TALKS – EXTRAMURAL**

- 2020 Oak Ridge National Laboratories: Evolving Targeted Therapies for Cancer (Speaking on Parthenon's behalf)  
BPDG Symposium on "Phenotypic Drug Discovery: Leveraging Computational Tools." New York Academy of Sciences (Speaking on Parthenon's behalf)  
2019 Keystone Symposium, Phenotypic Drug Discovery: Recent Advances and Insights from Chemical and Systems Biology. Breckenridge, CO.  
2018 Cancer Systems Biology Consortia (CSBC) Annual Meeting. Bethesda, MD.

### **SELECTED INVITED TALKS – INTRAMURAL**

- 2021 Mostly Molecular Biology Seminar, CU Boulder. "Bacteria Regulate Calcium Flux using the Physics of Phase Transitions."  
2021 Biophysics Seminar, BioFrontiers. "Single Cell Growth in Dynamic Environments".  
2019 VICB Annual Symposium. Richard Armstrong Prize Lecture.  
2019 "The Promethean Gene: The Perils and Promises of Human Genome Editing." Lunch and Learn Seminar Series hosted by the Graduate Student Association of the Chemical and Physical Biology Program.  
2018 Biochemistry Symposium. Vanderbilt.  
2017 Chemical Biology Association Seminar (CBAS).  
2016 "The Cure for Presbyopia in Scientific Presentations: An Informal Tutorial on Figure Generation in Inkscape." Lunch and Learn Seminar Series  
2015 "Emergence of cellular phenotypes from transcription factor networks: A systems-level approach." Stem Cell and Progenitor Interest Group (SPRING) Seminar. With David Wooten and Vito Quaranta.

### **ACADEMIC/COMMUNITY SERVICE AND LEADERSHIP POSITIONS**

- 2018–present Advisory Committee for Graduate and Professional Housing Initiative  
2016–2017 President Graduate Student Association Chemical and Physical Biology Program  
2016 Board member of local non-profit, Nashville Harriers  
2017 Volunteer at the Vanderbilt Children's Hospital, Orthopedic Clinic (50 hours)

### **PRESS COVERAGE**

- 2021, Aug "Development of a new framework and tool for multi-drug synergy and combination," *Vanderbilt Research News*, By Aaron Conley, Wooten et al., *Nature Communications*, 2021.  
2019, Feb "New algorithm calculates drug synergy; initial tests involve melanoma, lung cancer," *Vanderbilt Research News*, By Heidi Hall, Meyer et al., *Cell Systems*, 2019.

2017, March “Melanoma Study Finds New Ways to Enhance Targeted Therapies,” *Vanderbilt Reporter*, By Bill Snyder, Hardeman et al., *Scientific Reports*, 2017.

**JOURNALS REVIEWED FOR**

Scientific Reports (2019)  
Trends in Pharmacologic Sciences (2019)  
Nature Medicine (2019)  
Cancer Research (2016)

**RESEARCH EXPERIENCE PRIOR TO 2016**

2014–2015 Four research rotations in first year of graduate school  
–Quantitative tissue dynamics in embryogenesis, Dr. Shane Hutson  
–Image segmentation for assaying nascent RNA dynamics, Dr. Gregor Neuert  
–Clustering of Small Cell Lung Cancer subpopulations, Dr. Vito Quaranta  
–Protocol development for a 3D culture system, Dr. Erin Rericha

2012–2014 Undergraduate research: Investigated nanomagnetic spin-wave propagation in anisotropic films using the magneto-optical kerr effect  
Adviser: Dr. Kristen Buchanan, Colorado State University